

Cow in the Classroom

<http://youtu.be/aWXkox2aKSQ>

I have the greatest opportunity to teach animal science to many non-traditional agriscience students in the Boise Valley. Their background is minimal, with most students having never come into contact with livestock. I have foreseen the problems that I would encounter as I try to teach where the primal cuts come from on a carcass, how the digestive system works, how to properly artificially inseminate a cow, or describing the appropriate structure and parts of a cow. There are various teachers that have skeletal parts that they use for instruction. There are even businesses that sell entire mounted cow skeletons for over seven thousand dollars. My goal was to put together a cow skeleton for minimal cost that would serve as a superior teaching tool in comparison to those purchased through various catalogues. After approximately forty hours of labor and sixty dollars into supplies—I had a cow skeleton that could be used for instructional purposes.

It has been an exceptional teaching tool. From the moment I wheel the cow into the classroom, the students' interest is engaged. The skeleton has parts that unhook easily that allow for close examination and allow for bending and manipulation—unlike all of the other products on the market. Students had difficulty understanding why the hooks and pins were analyzed so much in evaluation. They quickly understood when they were able to see how the calf would need to exit through the pelvis. When learning about leg deformities students were able to take the legs from off of the skeleton and place them to model the appropriate leg deformities. Even the head swivels and removes easily in order to show how the head is removed during slaughter between the axis and atlas joints. The tail was made in order to be twisted and thrown over one's shoulder.

There are many factors that should be considered when putting the skeleton together. One of the first is to figure out where to get a skeleton. For those that live in arid climates, they may be easily found on open range or may even be eviscerated and then buried in sand to lose the flesh. Many people could opt for boiling (in which I would still recommend burying some sections in sand for four weeks). There are many beetles that could be purchased also as another remedy. My selection was to find dairy farmers that compost the animals in manure. Unbelievably, there were some advantages to this method. One of the best reasons was that it allowed for finding various high interest bones. Lucille, as she was named, is a combination of seven cows (the word "Lucille" has 7 letters and the name reminds us of the famous hominid skeleton Lucy). Some of the bones hint at skeletal infections and past fractures while showing different maturities. If one should select this last method for securing a skeleton, there are other social factors that may be considered. However, I have found that it allows for an interesting class discussion on proper animal disposal. Once a skeleton is secured, it is highly recommended that the bones are numbered and separated by side and section into boxes or other containers.

Key Steps

1. Build the base. Be sure to select a material that works for you. Consider the size of the door. Locate some castor wheels—you may consider army surplus stores or garage sales.

2. Build supports for the back bone. Square tubing with 4 inch wide flat steel welded to the bottom with channel welded at the top to cradle the vertebrae works very well.

3. Run bar through all vertebra. Use an adhesive between each vertebrae. Then attach to sacrum. The tail can be connected by various means to the sacrum.

4. Wire head and atlas vertebrae together while creating a loop that will slide over process on top of the axis vertebrae for holding the head on.

5. Wire on ribs to each vertebrae. These ribs may be sprung out using a bent, narrow flat piece of steel with the ribs secured. The other method is to place dowels between each rib. The following spacing can prove very helpful between the middle of the ribs.

1st Pair---3"

2nd Pair---3.5"

3rd Pair---6"

4th Pair---8.5"

5th Pair---11"

6th Pair---13"

7th Pair---16"

8th Pair---18"

9th Pair---19"

10th Pair---20.5"

11th Pair---21.5"

12th Pair---21"

13th Pair---21"

6. Attach legs. Shoulder blades with wire loops to slide over vertebrae. Pelvis bolted to sacrum. Hind legs bolted through socket joint.

7. Give a coat of polyurethane to keep it sanitary and long lasting.

Those are the main steps in order to have this teaching tool completed. I would be happy to discuss any of these steps in greater detail.